Garden Parkway-West (U-3321AA&B) Project Synopsis

Project Description and Purpose:

- The Department of Transportation, North Carolina Turnpike Authority (NCTA), proposes to construct the TIP #U-3321 project, known as the Garden Parkway and as the Gaston East-West Connector. The Preferred Alternative is a controlled-access all-electronic toll road extending from I-85 west of Gastonia in Gaston County to I-485 near the Charlotte-Douglas International Airport in Mecklenburg County. The total length of the Preferred Alternative is approximately 20.9 miles. The Preferred Alternative will be designed and constructed under two separate Design-Build contracts.

- The project referred to in this procurement and synopsis is referred to as the Garden Parkway-West and is described as follows:

    - U-3321AA: This project extends from I-85 west of Gastonia to US 321, for a distance of approximately 5.9 miles. The project includes construction of a two-lane, two-way facility constructed on one side of the ultimate four-lane divided freeway. Design, right-of-way acquisition and utility relocation will accommodate the ultimate four-lane divided facility.
    - U-3321B: This project includes the design, right-of-way acquisition, utility relocation, and construction of a four-lane divided freeway facility that extends from US 321 to a point just west of SR 2428 (Wilson Farm Road) in Gaston County and is approximately 5.5 miles long.

- This project will improve east-west transportation mobility in the area around the City of Gastonia and other municipalities in southern Gaston County (between Gastonia and the Charlotte metropolitan area) and establish direct access between the rapidly growing area of southeast Gaston County and western Mecklenburg County.

Planning:

- A Draft Environmental Impact Statement (EIS) for the Garden Parkway project was approved in April 2009. Combined Corridor/Design Public Hearings were held in June 2009. A Final EIS was issued in December 2010. The Record of Decision (ROD) is expected in March 2011. The Design-Build Team shall adhere to all commitments as finalized in the ROD. Copies of these documents will be made available.

Roadway Scope of Work:

- The Design-Build Team shall design and construct a controlled-access facility from I-85 west of Gastonia to just west of SR 2428 (Wilson Farm Road) in Gaston County. A two-lane, two-way roadway will be constructed from I-85 to US 321 as the first phase of the future four-lane divided freeway. The two-lane roadway will transition to a four-lane divided freeway facility at the US 321 interchange and will extend to just west of SR 2428 (Wilson Farm Road).

- From west to east, interchanges along the Garden Parkway-West will be located at I-85, US 29-74, Hudson Blvd (SR 1255), US 321, and Robinson Road (SR 2416). It is also anticipated that the Bessemer City Road (NC 274)/I-85 interchange will require reconstruction.

Environmental Scope of Work:

- The Design-Build Team will be responsible for preparing permit modifications to reflect final design plans and obtain final permits for this project. Mitigation, based on anticipated impacts of the Preferred Alternative, will be provided by NC Ecosystem Enhancement Program (EEP) and shall be funded by NCTA/NCDOT. NCTA is also pursuing opportunities for on-site mitigation. It is anticipated that the design and construction of this on-site mitigation will be the responsibility of the Design-Build Team. Additional mitigation required as a result of design changes by the Design-Build Team shall be the responsibility of the Design-Build Team.

Public Involvement Scope of Work:

- During the project's construction, the Design-Build Team shall coordinate with the NCDOT, including the NCTA and Division 12, Bessemer City, Gastonia, Cramerton, Belmont, McAdenville, Charlotte, Mecklenburg County, Gaston County, and other appropriate entities to inform the public of lane closures, construction progress, etc. A website shall be developed and maintained with current project information, progress updates, operations taking place, and general project-related information (right-of-way acquisition, noise walls, etc.).

Structure Scope of Work

- The project includes mainline bridge crossings of Blackwood Creek and an unnamed tributary to Crowders Creek located just east of US 321. The project also includes a bridge crossing of Crowders Creek on Hudson Boulevard.

- The project includes one mainline railroad crossing just east of US 321 and the replacement of an existing railroad bridge at the I-85/NC 274 interchange.

- There are multiple grade separated crossings anticipated for this project. The Design-Build Team shall design and construct bridges that adhere to the *AASHTO LRFD Bridge Design Specifications* at Bessemer City Road (NC 274) at I-85 and at the following locations that intersect the Garden Parkway-West:

    - I-85
    - Service Road at Belfast Drive
    - W. Franklin Boulevard (US 29-74)
    - Hudson Boulevard (SR 1255)
    - Crowders Creek Road (SR 1103)

- US 321
- Forbes Road (SR 2420)
- Robinson Road (SR 2416)
- Bud Wilson Road (SR 2423)
- Patrick Road (SR 2425)
- Potential widening of existing I-85 bridge over Oates Road

- Approximately 30 reinforced box concrete culverts will be required.

Railroad Coordination Scope of Work:

- The Design-Build Team shall be responsible for all coordination required with railroads to obtain construction agreements, permits, plan approvals and Railroad Force Account agreements.

Hydraulics Scope of Work:

- The Design-Build Team shall design and install all storm drainage systems.

- The Design Build Team shall develop a Stormwater Management Plan consistent with the NCDOT NPDES permit.

- The Design-Build Team will be responsible for all Culvert and Bridge Survey Reports.

- The Design-Build Team shall prepare CLOMR (or MOA) packages for all regulated floodway crossings.

All-Electronic Toll Zone Scope of Work:

- The Design-Build Team shall be responsible for the design and construction of the infrastructure for all-electronic toll (AET) collection facilities necessary to complete the project. This shall include:

    - Toll gantry structures, including riser conduit, cable raceways, and toll equipment mounting structures;
    - Toll facility buildings including aesthetic screen walls;
    - Building subsystems, including HVAC, back-up generators, lighting, etc.;
    - Equipment cabinet foundations in vicinity of gantries;
    - Conduit and junction boxes to connect the infrastructure, with separate facilities for power and communications; and,
    - Electrical service and power panel, as recommended by the toll system integrator.

- Lane-level toll technology will be designed and installed by a toll system integrator under separate contract.

Intelligent Transportation System

- The Design-Build Team shall design and construct certain elements of an Intelligent Transportation System (ITS) for the Garden Parkway-West. These ITS devices include dynamic message signs (DMS) and a conduit trunk line for the fiber-optic communications system (to be installed by others). The Design-Build Team will coordinate with the Design-Build Team for U-3321C&DA during the design and installation of these ITS devices.

Location & Surveys Scope of Work:

- Survey control and GPS calibrations will be provided to the short-listed teams. Additional surveys shall be the responsibility of the Design-Build Team.

- Known existing utilities have been identified and will be provided to the short-listed teams. Subsurface utility engineering (SUE) work shall be the responsibility of the Design-Build Team.

- Design mapping created from the reduction of aerial photography and supplemented with LIDAR and field surveys will be provided to the short-listed teams. Mapping needed outside of the areas provided will be the responsibility of the Design-Build Team.

Geotechnical Engineering Scope of Work:

- The site is located within the Western Piedmont Physiographic and Geologic Province of North Carolina. The Piedmont Province is characterized by gently to steeply sloping topography with well-rounded hills and along rolling ridges with a northeast-southwest trend dissected by a moderate to well developed (mature) dendritic-type drainage system consisting of drainage swales, hollows, tributaries, streams and rivers. More specifically, the site is located within the Charlotte Belt. The parent rock is interpreted to be metamorphosed quartz diorite and foliated to massive granitic rock with metavolcanic rocks. These rocks typically weather irregularly with shallow to deep residual soils overlying saprolite and weathered rock to bedrock. The depth of weathering depends on the chemical composition of the underlying parent rock material.

- Information from the soil test borings obtained along the roadway alignment and at proposed bridge and culvert locations will be provided to the short-listed teams. Soil test boring logs will be presented on the roadway profile and cross section sheets. Individual logs will be provided for proposed bridge structures.

- The Design-Build Team shall be responsible for additional geotechnical investigations and for the design and construction of all foundations, embankments, slopes, retaining walls and temporary structures.

Erosion Control Scope of Work:

- All erosion control designs and implementation shall be the responsibility of the Design-Build Team.

- The Design-Build Team shall utilize NCDOT Certified Installers and Inspectors on the project.

Traffic Control Scope of Work:

- The Design-Build Team shall be responsible for development and installation of the Traffic Management Plans.

- A list of parameters, such as lane closures, time restrictions, and general guidelines will be provided to the short-listed teams.

Pavement Marking Scope of Work:

- The Design-Build Team shall be responsible for development and installation of the Pavement Marking Plans.

Pavement Scope of Work:

- The NCTA is developing an alternate pavement selection provision which will be included in the project. The Design-Build Team will have the option of selecting the pavement type and designing the pavement structure.

- The RFP will include mainline pavement designs for both asphalt and concrete. The Design-Build team may choose to use one of these options, or, through the Alternate Technical Concept process, submit other pavement designs. Criteria for these alternate pavement designs will be outlined in the RFP including design methodology options.

- The Design-Build Team shall be responsible for all temporary pavement designs and the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, including detour routes and roadway used for hauling, if necessary. If required, the Design-Build Team shall be responsible for strengthening existing facilities prior to routing traffic on them.

Right of Way Scope of Work:

- It is anticipated that the NCTA will acquire the right of way and easements for the project. However, immediately after announcing the reduced candidates list, the NCTA will discuss options with the proposers for acquisition services that may be performed by the Design-Build Team. Discussions will include incentive options to limit the cost of right-of-way acquisition.

- The cost of the right of way or easements will be borne by the NCTA. An incentive will be provided to Design-Build Team for reducing the right-of-way cost and reducing the number of right-of-way claims through changes in the preliminary design. Similarly, the Design-Build Team will be responsible for increases in the right-of-way cost and the NCTA administrative cost for right-of-way acquisition caused by changes made in the preliminary design by the Design-Build Team.

- The Design-Build Team will be required to prioritize parcel acquisition based on critical path construction activities.

Utility Conflicts and/or Construction Scope of Work:

- The Design-Build Team shall be responsible for all utility conflicts/relocations. Coordination shall include any and all necessary utility agreements when applicable.

- Utility by Others Plans will be provided to all short-listed teams. The Design-Build Team shall be responsible for coordinating the construction / relocation of private utilities with the appropriate owners.

- The Design-Build Team shall be responsible for relocating any water and sewer conflicts associated with this project. Preliminary routing plans will be provided to short-listed teams.

Signing Scope of Work:

- The Design-Build Team shall be responsible for the design, fabrication, and installation of all toll and standard signs required throughout the construction limits, and outside the construction limits to provide appropriate signing of the mainline, -Y-lines, service roads, and cul-de-sacs. A signing strip map will be provided to all short-listed teams.

Signals Scope of Work:

- The design and installation of signals and associated equipment shall be the responsibility of the Design-Build Team.

- It is anticipated that new or revised signals will be required at 4 intersections.

Lighting Scope of Work:

- The Design-Build Team shall be responsible for the design and construction of interchange lighting for this facility, at selected locations to be determined at a later date. Roadway lighting may also be required for this project at specified locations.

Critical Path Method (CPM):

- The Design-Build Team shall provide a cost-loaded critical path method project schedule.

Construction Engineering Inspection (CEI) Scope of Work:

- The Design-Build Team shall be responsible for quality control, to include construction inspection, materials sampling and testing, and contract administration required for construction of this project hereinafter referred to as "Construction Engineering & Inspection" (CEI). The Design-Build Team shall employ a private engineering firm to perform CEI for all work required under this contract. This private engineering firm is to be a separate entity, unaffiliated with the Design-Build Team. Limited work may be allowed to be performed for the Design-Build Team by the CEI firm, if that specific work is pre-approved in writing by the NCDOT State Contract Officer.

Aesthetic Design Scope of Work:

- The NCTA will coordinate with local stakeholders to establish architectural elements on which to base the project aesthetics. Aesthetic treatments, which blend the project into the regional context, will be utilized for the bridges, noise walls, retaining walls, gantries, overhead sign structures, all-electronic toll (AET) collection support buildings and other features. The Design-Build Team shall perform additional coordination with community stakeholders and shall design and construct the aesthetic treatments for the project.